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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,953	06/25/2003	William G. Bornmann	D6371D	3108

7590 07/22/2004
Benjamin Aaron Adler, Ph.D., J.D.
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8011 Candle Lane
Houston, TX 77071

EXAMINER

SHIAO, REI TSANG

ART UNIT PAPER NUMBER

1626

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,953

Applicant(s)

BORNMANN ET AL.

Examiner

Robert Shiao

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on responses filed on 05/20, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,10,12-14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,10,12-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This application claims benefit of the provisional applications:
60/277,116 with a filing date 03/19/2001.
2. Amendment of claims 1-2,4-5,14, and cancellation of claims 3, 6-9, 11, 15, and 17-21 in Paper No. 0504, dated May 20, 2004, is acknowledged. Claims 1-2, 4-5, 10, 12-14, and 16 are pending in the application.

Response to Election/Restriction

3. Applicant's election without traverse of Group II claims 1-16, in part, in the reply filed on May 20, 2004, is acknowledged. Since claims 3, 6-9, 11, and 15 have been cancelled, therefore, claims 1-2, 4-5, 10, 12-14, and 16 are prosecuted in the case.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 10 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 10 contains subject matter "neoplastic disease" without disclosing processes of using (i.e., named cancer disease), which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed,

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had possession of the claimed invention. Incorporation of the scope of processes of using (i.e., ovarian carcinoma) of claim 13 into the claims would obviate the rejection. Claim 14 contains subject matter "tumor cell" without disclosing processes of using (i.e., named tumor cell), which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Incorporation of the scope of processes of using (i.e., ovarian cancer cell) of claim 16 into the claims would obviate the rejection.

5. Claim 10 and 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1988):

- 1) Nature of invention.
- 2) State of prior art.
- 3) Level of ordinary skill in the art.
- 4) Level of predictability in the art.
- 5) Amount of direction and guidance provided by the inventor.
- 6) Existence of working examples.
- 7) Breadth of claims.
- 8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

See below:

1) Nature of the invention.

The claim is drawn to a method treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells.

2) State of the prior art.

The reference Davidsen et al. US 5,985,911 does not indicate which compounds of instant compounds may be useful in the claimed invention. Davidsen et al. '911 pertains to c-terminal ketone inhibitors of matrix metalloproteinases and TNF α secretion.

3) Level of ordinary skill in the art.

The level of ordinary skill in the art is high. The methods of treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells, encompass a vast number of methods treating various neoplastic diseases and tumor cells. Applicant's specification does not enable the public to prepare such a numerous methods by the instant examples disclosed in the specification.

4) Level of predictability in the art.

The art pertaining to relates a method treating a neoplastic disease or a tumor cell, wherein none of a named neoplastic disease or tumor cell is disclosed, remains highly unpredictable, see claim 10, line 1, and claim 14, line 1. Different types of diseases or tumor cells require various experimental procedures and without guidance that is applicable to all possible "neoplastic diseases or tumor cells", there would be little predictability in the scope of claimed methods.

5) Amount of direction and guidance provided by the inventor.

The methods of treating a neoplastic disease or a tumor cell without disclosing a named neoplastic diseases or a named tumor cells, encompass a vast number of methods treating various neoplastic diseases and tumor cells. Applicant's limited guidance does not enable the public to prepare such a numerous methods treating neoplastic diseases or tumor cells in the specification. There is no enablement for "treating a neoplastic disease or a tumor cell, wherein none of a named neoplastic disease or tumor cell is disclosed" representing various neoplastic diseases including bone cancer, lymphoma, bone cancer cells, B lymphoma cell, etc, many of which are neither enabled nor supported in the specification.

6) Existence of working examples.

The methods of treating a neoplastic disease or a tumor cell without disclosing a named neoplastic diseases or a named tumor cells, encompass a vast number of methods treating various neoplastic diseases and tumor cells. Applicant's limited working examples do not enable the public to prepare such a method of "The methods of treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells, encompass a vast number of methods treating various neoplastic diseases and tumor cells" in the specification. Applicants claim "methods of treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells", however, the specification provides only limited examples of the instant method, see pages 66-68.

7) Breadth of claims.

The claim are extremely broad due to the vast number of possible "methods of treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells".

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The specification did not enable any person skilled in the art to which it pertains to make or use the invention commensurate in scope with this claim. In particular, the specification failed to enable the skilled artisan to practice the invention without undue experimentation. The skilled artisan would have a numerous methods to perform in order to obtain "methods of treating a neoplastic disease or a tumor cell without disclosing a named cancer diseases or a named tumor cells" as claimed. Based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not perform the claimed process without undue experimentation, see *In re Armbruster* 185 USPQ 152 CCPA 1975. Incorporation of the scope of processes of using, i.e., ovarian carcinoma of claim 13 and human ovarian cancer cells of claim 16, into the claims 10 and 14 respectively would obviate the rejection.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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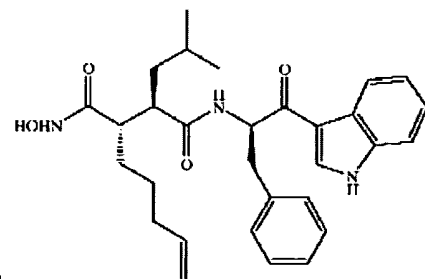
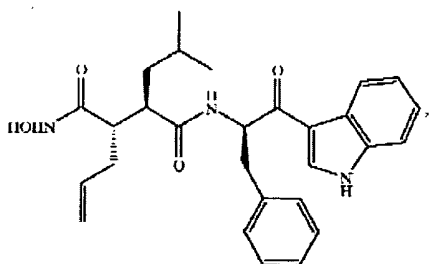
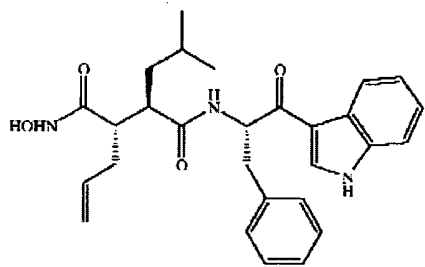
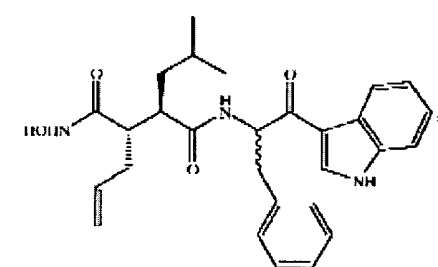
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 10, 12-14, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Davidsen et al. US 5,985,911.

Applicants claim a compound of the formula in claim 1 as agents treating cancer.

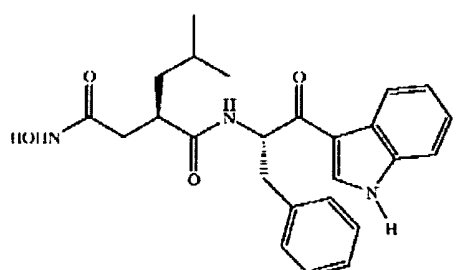
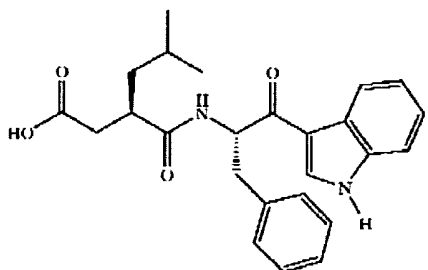
Davidsen et al. disclose compounds of the following formula:

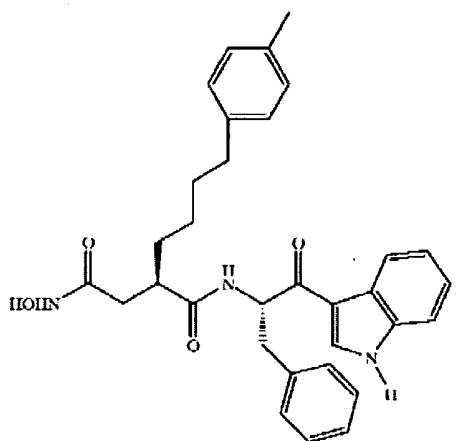


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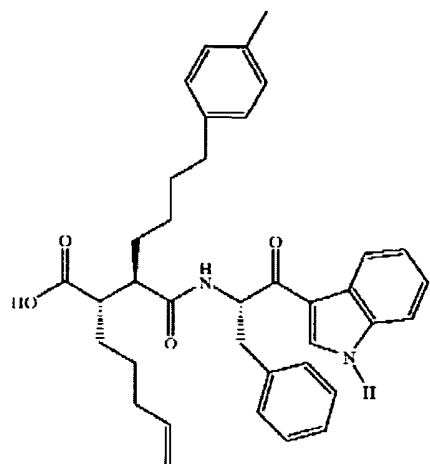
, see

column 120, lines 1-50;



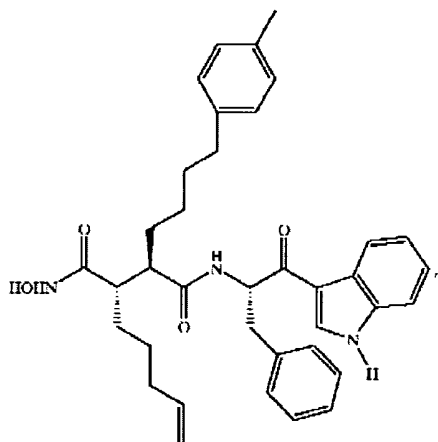


, and

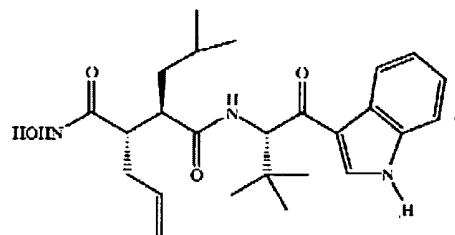


, see

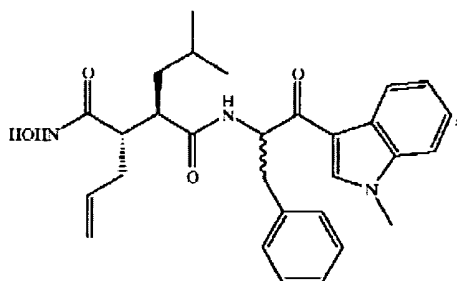
column 121, lines 1-60;



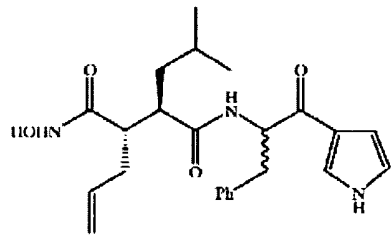
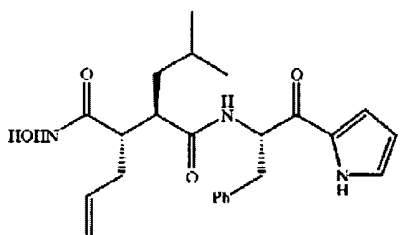
, and



see column 122, lines 1-30;



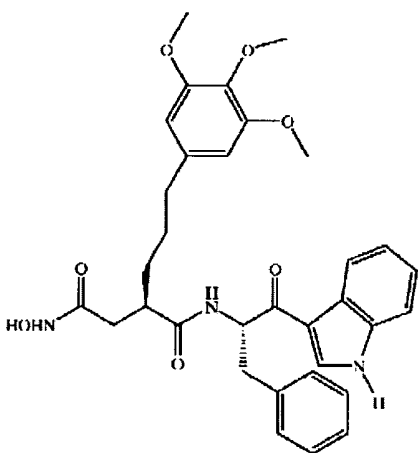
, see column 123, lines 35-45;



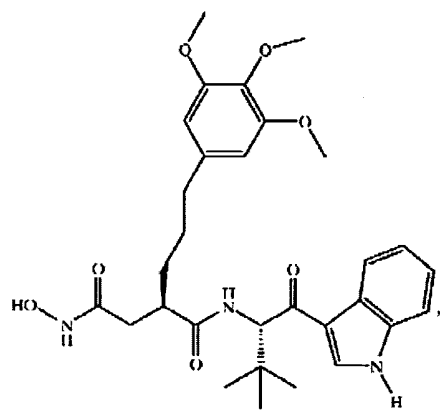
, and

, see

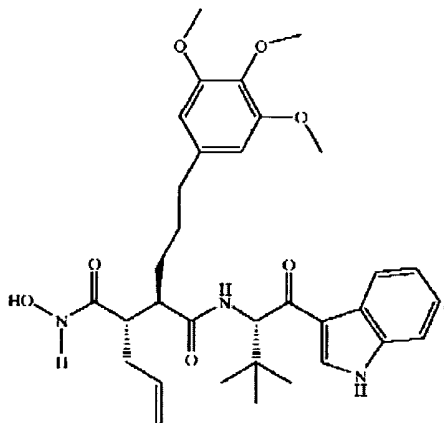
column 124, lines 30-35 and 50-55;



, and



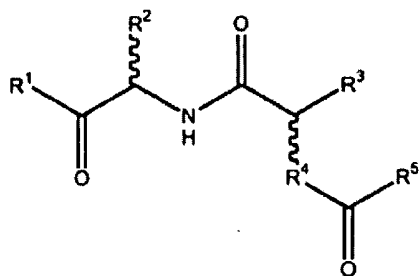
see column 129, lines 20-50; and



, see column 130, lines 1-15.

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Davidson et al. compounds clearly anticipate the compounds of instant formula of claim1,



, wherein the variable R¹ represents optional substituted indole or pyrrole; the variable R² represents benzyl or C(CH₃)₃; the variable R³ represents C₃₋₈ alkyl or C₃₋₈ alkyl optionally substituted with straight or branched or cyclic hydrocarbon chains (i.e., see page 7, lines 18-19); the variable R⁴ represents C₁₋₃ alkyl optionally substituted with straight or branched or cyclic hydrocarbon chains (i.e., see page 7, lines 18-19); the variable R⁵ represents OH or NHOH.

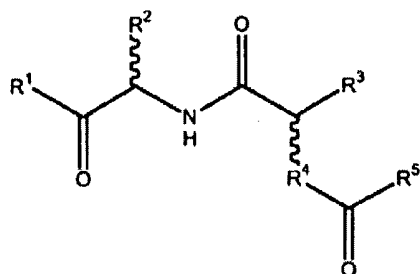
Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-5, 10, 12-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davidson et al. US 5,985,911.

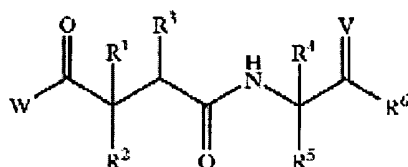
Applicants claim a compound of the formula in claim 1 as agents treating cancer,



and the compound is found in the pages 7-30 of the specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Davidson et al. disclose compounds as MMP's inhibitors as treating cancer of the formula,



, wherein the variable W represents

NHOH or -OH; the variable V represents O; the variables R¹ and R² independently represent hydrogen or alkyl; the variables R³ represents alkyl, unsubstituted or substituted phenyl, or phenylalkyl; the variable R⁴ represents hydrogen or alkyl; the variable R⁵ represents alkyl, phenyl, or substituted phenyl; the variable R⁶ represents indolyl, substituted indolyl, pyrrolyl, imidazolyl, or substituted imidazolyl. A number of compounds have been specifically exemplified, see column 120-132.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant claims and Davidsen et al. is that the variable R^5 of instant compounds represent NH_2 , OH, or NHOH, while Davidsen et al. represent NHOH or $-OH$.

Davidsen et al. teach that Davidsen et al. compounds are inhibitors of MMP's and can be used for treating tumor growth and metastasis or invasion, see column 1, lines 40-50, and column 132, lines 30-36.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the instant claims prima facie obvious **because** one would be motivated to employ the compounds of Davidsen et al. and Davidsen et al. inherent teaching to obtain instant compounds of the formula of claim 1, wherein the variable R^1 represents optional substituted indole or pyrrole; the variable R^2 represents benzyl or $C(CH_3)_3$; the variable R^3 represents C_{3-8} alkyl or C_{3-8} alkyl optionally substituted with straight or branched or cyclic hydrocarbon chains (i.e., see page 7, lines 18-19); the variable R^4 represents C_{1-3} alkyl optionally substituted with straight or branched or cyclic hydrocarbon chains (i.e., see page 7, lines 18-19); the variable R^5 represents OH or NHOH.

The motivation to make the claimed compounds derives from the expectation that the instant claimed compounds derived from known Davidsen et al. compounds and inherent teaching would possess similar activity (i.e., agents for treating cancer) to that which is claimed in the reference.

Objection

8. Claims 1-2, 4-5 are objected to as containing non-elected subject matter (i.e., the starting material 2,5-dioxo-pyrrolidinyl ester of step (a) of claim 5). It is suggested that applicants amend the claims to the scope of the elected subject matter as defined on the Group II of restriction requirement, dated March 17, 2004.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Shiao whose telephone number is (571) 272-0707. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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R. S.

Robert Shiao, Ph.D.
Patent Examiner
Art Unit 1626

for *R. Desai*

Joseph K. McKane
Supervisory Patent Examiner
Art Unit 1626

July 19th 2004.

July 16, 2004